ENVIRONMENT AND ENERGY

United Nations Development Programme

COMOROS CASE STUDY

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ADAPTING WATER RESOURCE MANAGEMENT IN THE COMOROS TO EXPECTED CLIMATE CHANGE

Country	Union of Comoros [http://www.adaptationlearning.net/country-profiles/km]
Region	Eastern Africa
Key Result Area	Adaptation
Thematic Sector	Water Resource Management Agriculture *Key words: water resource management, reforestation, water quality, health, climate change information, policy, capacity development, institutional development*
Project Activity Dates	Start: 2011 End: 2015
Key Stakeholders	Island communities in five pilot sites: Moroni and Bandasamlini-Hamalengo (Grand-Comore), Nioumakele and Lingoni-Pomoni (Anjouan), Mbatse and Hoani (Moheli)

ABSTRACT

Rainfall decline, mean annual temperature and climatic hazard frequency are expected as climate change unfolds in the Comoro archipelago. As a result of these impacts, climate change will negatively impact water supply and water quality, both of which are already affected by inadequate management of water resources and deforestation. Comorian communities, autonomous islands' governments, and the national government presently lack the technical capacity, management capacity, physical resources and financial resources to overcome or cope with the anticipated changes in climatic conditions. In direct response to these current and projected needs, this UNDP-and UNEP supported and GEF-LDCF funded project, *Adapting Water Resource Management in the Comoros to Expected Climate Change* will reduce climate change risks in the water sector. Through investments in water supply and storage technologies, coupled with a work programme on institutional development and capacity development, this project will increase resilience for the island communities against the expected climate change impacts on water resources.

BRIEF DESCRIPTION OF ISSUES

Background

Climate change projections for the Comoros include an increase in the frequency of climatic hazards (e.g. tropical cyclones, droughts, episodes of heavy rainfall and flooding), sea level rise and increases in temperature. Climate change will thus adversely impact water supply by reducing input into ground and surface waters (i.e. reduced rainfall and increased droughts); and increasing evapotranspiration rates. Climate change will also adversely impact water quality by reducing the dilution effect (i.e. reducing input into ground and surface waters), increasing salinisation of coastal aquifers as a result of SLR, sedimentation of river water (increasing with greater soil erosion in deforested landscapes as a result of more episodes of heavy rainfall), and reduced river recharge rates as a result of the prolonged dry season.

The effects on the water sector will be compounded by baseline factors such as high levels of run-off due to deforestation and landslides in Anjouan and Mohéli, and the inadequate management of water resources in the Comoros. Comorian communities, autonomous islands' governments, and the national government presently lack the technical capacity, management capacity, physical resources and financial resources to overcome or cope with the anticipated changes in climatic conditions. This is attributable to: i) limited investment in the water sector, consequent limited infrastructure and quality management practices; ii) government instability; iii) high population density; iv) high poverty levels; v) limited technical capacities to manage water supply infrastructure and to assess the risks posed to water resources by climate change; vi) limited awareness concerning climate change and predicted impacts; and vii) inadequate water-related policies (i.e. there are no regulations for enforcement and policies are outdated).

BRIEF DESCRIPTION OF PROJECT

Solution: Adaptation Approach, Components and Description

The project will support Comorian communities adapt to climate change firstly by increasing the supply of safe water resources by constructing and rehabilitating water storage facilities in vulnerable pilot sites on each of the three islands – Bandasamlini-Hamalengo, Moroni, Lingoni-Pomoni, Nioumakélé, and Mbatse-Hoani in the Moheli Island - to a standard able withstand the expected impacts of climate change. Secondly, by training personnel and strengthening institutional capacity in order to promote sustainable management of this infrastructure and to use climate risk information for water sector planning. Thirdly, by promoting policies and budgetary adjustments that would up-scale and catalyze the successful pilot sites throughout the Comoros, including through the development of national standards for adaptation measures. Finally, by improving institutional capacity to implement, monitor and report on climate change adaptation.

Capacity to analyse, protect, and harness valuable water sources will be developed at community, district (canton), autonomous island and national level. Extensive training and engagement in implementing interventions, both at national institutions and at the community level, will facilitate effective project management, generate community ownership and ensure that project interventions are sustainable beyond the project's lifespan. In so doing, the project will increase knowledge and awareness on good adaptation practices in the water sector. Adaptation learning generated from the pilot interventions will be used to guide mainstreaming of

adaptation in national fiscal, regulatory and development policy, in order to support adaptive practices on a wider scale.

Overall, the project will improve access to safe drinking water in the most vulnerable regions of the Comoros[1] (with the potential for up-scaling) under changing climatic conditions, helping to achieve Target 7C of MDG 7 ("halve by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation"). The resultant improved access to drinking water will be a key element for the improvement of nutritional status of the Comorian community, therefore attaining better health outcomes and positively affecting MDGs 4 and 6 ("Reduce child mortality" and "Combat HIV/AIDS, malaria and other diseases", respectively). In addition, project interventions (such as planting indigenous trees to reduce soil erosion) will promote environmental sustainability, thus contributing towards MDG 7 ("Ensure environmental sustainability").

Project Targets

RESULT	TARGET
Objective: **To reduce the risk of climate change on lives and livelihoods from impacts on water resources in Comoros**	1a. 50% increase in the VRA score at the end of the project 1b. 20% increase in the VRA score mid-way through the project.
Outcome 1: **Institutional capacity strengthened to integrate climate change information into water resource management**	1. At least one policy document is revised by the end of the project. 2. By project end, at least 10 policy makers and planners are using adjusted processes and methods to develop water management policies that integrate climate change projections.
Outcome 2: **Improved water supply and water quality for selected pilot communities to combat impacts of climate change**	1a. By the end of the project, at least 50% of the populations within each pilot site are able to access at least 50 litres per day of safe drinking water. 1b. Mid-way through the project, pilot interventions regarding the construction and rehabilitation of water supply infrastructure are at least 90% completed. 2. By project end, the number of cases of hepatitis and typhoid fever is reduced by at least 25% in the pilot sites. 3a. Mid-way through the project, at least 30ha at each of the two pilot sites where reforestation will be piloted has been restored. 3b. At least 50% of forest cover in reforested areas by the end of the project. 4. All interventions will be designed and implemented using gender-sensitive planning tools.
Outcome 3: **Increase awareness and knowledge of adaptation good practice for continued process of policy review and development**	1a. By the end of the project, at least 30% of the population within pilot site communities are aware of climate change impacts and adaptation options. 1b. Mid-way through the project, at least 10% of the population within pilot site communities are aware of climate change impacts and adaptation options based on their involvement with pilot site interventions. 2a. By the end of the project, project lessons are distributed in hard copy (e.g. pamphlets, briefing notes, newsletters, booklets etc.), electronically (e.g. via the project website), via radio broadcast and via one national and three island-level workshops. 2b. Mid-way through the project, a project website is operational and is regularly updated with project information.

Sustainability

The sustainability of the project's benefits will depend on the willingness of stakeholders to adopt interventions and continue with them beyond the duration of the project lifetime, and the long-term political and financial commitment of policy-makers to provide enabling investment environments for scaling up of successful adaptation measures. Adequate technical, legal and institutional capacity and expertise (all part of adaptive capacity) is required at the national, local and autonomous island levels for sustainability. As such, the project will strengthen adaptive capacity by improving institutional coordination between government ministries and departments, setting up management arrangements to ensure financial sustainability of the interventions, Strengthening capacity of stakeholders to implement adaptation measures, strengthening capacity of stakeholders to maintain constructed/rehabilitated water supply/storage infrastructure beyond the project lifetime (including the establishment of management committees), developing the evidence base to make the case for greater levels of investments in adaptation, and developing national standards for adaptation measures in the water sector. Sustainability will also be improved through the numerous awareness raising and knowledge dissemination activities undertaken by the project

Replicability

The project is being piloted in five pilot sites on three islands, covering 14,304 households. The potential for replicability is approximately 111,700 households across all three islands of Comoros. The project will seek to replicate successful adaptation measures through the development of water supply and storage construction and rehabilitation standards that reflect changing climatic conditions. The project will generate evidence on the cost-effectiveness of adaptation interventions in order to facilitate policy and budgetary adjustments. The close involvement of government agencies and departments promises potential for future incorporation of the project's approaches into on-going planning and strategies. Furthermore, the project will build capacity for documenting lessons learned, and establishing a cross-ministerial body for government coordination on adaptation policy.

Extensive training and capacity building will be undertaken of management committees and of technical staff regarding pilot interventions, which will ensure that future interventions in the water sector meet international standards as demonstrated in the pilot interventions. In so doing, project interventions will be ensured into the future and are more likely to be replicated and/or upscaled.

Funding

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UNDP grant: USD$200,000
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Project Cost: US$13,056,318

Time Frame

2010/2014
Profile Created: November 2011
Profile updated: February 2012

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